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EXAMINER
HOM, SHICK C

ART UNIT	PAPER NUMBER
2666	6

DATE MAILED: 07/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/511,242	NARVINGER ET AL.	
	Examiner	Art Unit	
	Shick C Hom	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 2/23/2000, 5/24/00 .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-31 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-31 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a)☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. Figures 1-5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: in page 1 line 8 update status of application 09/185,395, via inserting after the word "1998," --- now U.S. Patent No. 6,339,646,---.

Appropriate correction is required.

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

4. Claims 3, 7, 15, 12-15, 16-22, and 26-31 are objected to because of the following informalities: in claim 3 line 1, the words "an uplink" seem to refer back to "an uplink" recited in claim 2 line 2. If this is true, it is suggested changing "data" to ---the data---. In claim 7 line 4 delete "produced" and insert ---produce---. In claim 12 line 3, claim 19 line 4, claim 27 line 3, and claim 30 line 3, the words "a frame" seem to refer back to "a compressed mode frame" recited in claims 12, 27, 30 line 1, "a spread spectrum frame" recited in claim 19 line 1, respectively. If this is true, it is suggested changing "a frame" to ---the frame---. In claim 15 line 2 and claim 29 line 4, spell out acronym TFCI, i.e. delete "TFCI" and insert --- Transport Format Combination Indicator TFCI---. In claim 18 line 9 insert period at the end of the words "transmission gap." In claim 29 line 4, spell out acronym TPC, i.e. delete "TPC" and insert ---Transport Power Control TCP---. In claim 16 line 6, claim 17 lines 1-2, claim 26 lines 1-2, and claim 31 line 2 the words "a transmission gap" seem to refer back to "a transmission gap" recited in claim 16 line 5, claim 25 line 5, claim 30 line 3, respectively. If this is true, it is suggested changing

"a transmission gap" to ---the transmission gap---. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 1-31 are rejected under 35 U.S.C. 102(a) as being anticipated by 3GPP TS25.212 V2.2.0.

Regarding claim 1:

3GPP TS25.212 V2.2.0 discloses the method of transmitting a code division multiple access frame in a cellular communications network (Figs. 1, 2, and page 7 paragraph 3.3 which recite the mobile station MS, base station BS, and DS-CDMA communication recited in the document), the method comprising the steps of: providing the CDMA frame so as to include a plurality of slots and at least a portion of a transmission gap (see the frame including the slots in Fig. 12 and the transmission gap in Figs. 16 and 20); defining the transmission gap using a spreading

factor and redundancy of information bits to be transmitted (see the method of transmission time reduction pages 39-40 paragraph 4.4.2 including the reduction of the spreading factor, paragraph 4.4.2.3 and see Fig. 15, Table 10 and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame); and transmitting the frame, including the plurality of slots, on a channel (Figs. 1-2).

Regarding claim 8:

3GPP TS25.212 V2.2.0 discloses the method of transmitting spread spectrum frames (see Figs. 1 and 2), the method comprising the step of: providing data to be transmitted on a channel (in Figs. 1 and 2 note the physical channels PhCH#1, PhCH#2, ...); spreading a first portion of the data on a higher rate sequence using a first spreading factor to produce a first coded information signal including a first frame including a plurality of slots (see the frame including the slots Fig. 12 and the method of transmission time reduction by reducing the spreading factor as in page 40 paragraph 4.4.2.3); transmitting the first frame, including all slots thereof, on the channel (Figs. 1 and 2); forming a compressed mode frame (see the compressed mode frame in Fig. 16) by spreading a second portion of the data on a

higher rate sequence using a second spreading factor to produce a second coded information signal including a second frame, wherein the second spreading factor is less than the first spreading factor so that the second frame includes at least a portion of a transmission gap having a length less than half the number of total slots in the second frame (Fig. 20 shows both second frame and the portion of a transmission gap having a length less than half the number of total slots in the second frame and page 41 paragraph 4.4.3.2 describes the compressed-mode sequence of alternating transmission gap patters using the parameters in Table 14 to define the sequence including the spreading factor); and transmitting the second frame on the channel (Figs. 1 and 2).

Regarding claim 10:

3GPP TS25.212 V2.2.0 discloses the compressed mode spread spectrum frame to be transmitted on a channel (see Fig. 16 and page 38 paragraph 4.4), the frame comprising: a plurality of time slots; a transmission gap defined between first and second ones of the time slots in the frame (see the frame including the slots in Fig. 12 and the transmission gap in Figs. 16 and 20); and wherein a length of the transmission gap is less than half of a time length of the entire frame (see Fig. 19, Table 13, and Fig.

20 which shows both second frame and the length of the transmission gap being less than half of a time length of the entire frame), with the transmission gap length being defined at least in part by using a first spreading factor reduced by a factor of two relative to a second spreading factor which also may be used on the channel (page 41 paragraph 4.4.3.2 describes the compressed-mode sequence of alternating transmission gap patters using the parameters in Table 14 to define the sequence including the spreading factor).

Regarding claim 12:

3GPP TS25.212 V2.2.0 discloses the method of transmitting a compressed mode frame in a communications network (see Fig. 16 and page 38 paragraph 4.4), comprising the step of: forming a frame including a plurality of slots and a transmission gap of length TGL (see the frame including the slots in Fig. 12 and the transmission gap in Figs. 16 and 20); increasing a bit or code rate to form the transmission gap and create room for redundant format indicator bits (see the method of transmission time reduction by rate matching (puncturing as in page 39 paragraph 4.4.2.1); and repeating a number of format indicator bits from a first slot in the frame in a second slot of the frame (Fig. 20 shows the second frame).

Regarding claim 16:

3GPP TS25.212 V2.2.0 discloses the apparatus for transmitting a code division multiple access frame from a mobile station to a base station in a cellular communications network (Figs. 1, 2, and page 7 paragraph 3.3 which recite the mobile station MS, base station BS, and DS-CDMA communication recited in the document), the apparatus comprising: means for forming the frame so that the frame includes a plurality of time slots and at least a portion of a transmission gap (see the frame including the slots in Fig. 12 and the transmission gap in Figs. 16 and 20); means for forming a transmission gap having a transmission gap length in the frame by using a reduced spreading factor and an increased redundancy of information bits to be transmitted (see the method of transmission time reduction pages 39-40 paragraph 4.4.2 and Fig. 15, Table 10 and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame); and a transmitter for transmitting the frame from the mobile station to the base station (Figs. 1-2).

Regarding claim 18:

3GPP TS25.212 V2.2.0 discloses the apparatus for transmitting an uplink compressed mode frame in a CDMA based

communications network (Figs. 1, 16 and page 38 paragraph 4.4), the apparatus comprising: means for forming the uplink compressed mode frame so as to include a plurality of slots and a transmission gap of length TGL (Fig. 16 and page 38 paragraph 4.4); means for repeating a number of format indicator bits from a first slot in the frame in a second slot of the frame; and wherein the format indicator bits to be repeated are determined at least in part based upon at least one of the length of the transmission gap (see Fig. 15, Table 10 and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame), and a location of the transmission gap (Fig. 20 shows the second frame and page 41 paragraph 4.4.3.2 describes the compressed-mode sequence of alternating transmission gap patters using the parameters in Table 14 to define the sequence).

Regarding claims 19 and 23:

3GPP TS25.212 V2.2.0 discloses the apparatus for transmitting a spread spectrum frame or the mobile station for used in a cellular communications network (Figs. 1, 2, and page 7 paragraph 3.3 which recite the mobile station MS, base station BS, and DS-CDMA communication recited in the document), the apparatus or the mobile station comprising: a spreading circuit

spreading bits to a bit rate using a code with a reduced spreading factor and including the spread bits in a frame which includes a plurality of time slots and a transmission gap therein (Figs. 20 and 16 show the transmission gap in the frames and page 41 paragraph 4.4.3.2 describes the compressed-mode sequence of alternating transmission gap patters using the parameters in Table 14 to define the sequence including the spreading factor); and a rate match defining a length of the transmission gap using increased redundancy of at least some of the bits (page 39 paragraphs 4.4.2.1-4.4.2.2 describe the transmission time reduction by puncturing).

Regarding claim 25:

3GPP TS25.212 V2.2.0 discloses the method of transmitting a code division multiple access uplink frame in a cellular communications network (see Figs. 1 and page 7 paragraph 3.3 which recite the mobile station MS, base station BS, and DS-CDMA communication recited in the document), the method comprising the steps of: providing the CDMA frame so as to include a plurality of slots and at least a portion of a transmission gap (see the frame including the slots in Fig. 12 and the transmission gap in Figs. 16 and 20); defining the transmission gap using one of a spreading factor and redundancy of information bits to be

transmitted; and transmitting the uplink frame (see the method of transmission time reduction pages 39-40 paragraph 4.4.2 including the reduction of the spreading factor, paragraph 4.4.2.3 and see Fig. 15, Table 10 and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame), including the plurality of slots (see the frame including the slots in Fig. 12), on a channel from a mobile station to a base station of the network (see Figs. 1 and page 7 paragraph 3.3 which recite the mobile station MS, base station BS, and DS-CDMA communication recited in the document).

Regarding claim 27:

3GPP TS25.212 V2.2.0 discloses the method of transmitting a compressed mode frame in a communications network, comprising the steps of: forming a frame including a plurality of slots and a transmission gap of length TGL (see the frame including the slots in Fig. 12 and the compressed mode frame transmission gap in Figs. 16 and 20); and repeating a number of control bits from a first slot in the frame in a second slot of the frame in order to increase redundancy of control bits (see Fig. 15, Table 10 and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame).

Regarding claim 30:

3GPP TS25.212 V2.2.0 discloses the method of transmitting a compressed mode frame in a communications network, comprising the steps of: forming a frame including a plurality of slots and a transmission gap of length TGL (see the frame including the slots in Fig. 12 and the compressed mode frame transmission gap in Figs. 16 and 20); and transmitting informational data in a first number of slots in the frame, and transmitting control bits in a second number of slots in the frame which is greater than the first number of slots, so that control bits are transmitted in a larger number of slots in the frame than are informational bits (see Fig. 20 shows the frame and the portion of a transmission gap for transmitting control bits and Tables 11 and 12 show control bits being transmitted in a larger number of slots in the frame than are informational bits).

Regarding claim 2:

3GPP TS25.212 V2.2.0 discloses wherein said transmitting step comprises transmitting the frame on an uplink from a mobile station to a base station in the network (see Fig. 1 and page 7 paragraph 3.3 which recite the mobile station MS, base station BS, and DS-CDMA communication recited in the document); and wherein said defining step includes defining the transmission gap

using a reduced spreading factor and increased redundancy (see the method of transmission time reduction page 40 paragraph 4.4.2.3 on using reduced spreading factor and Fig. 15, Table 10 and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame).

Regarding claim 3:

3GPP TS25.212 V2.2.0 discloses wherein the channel is an uplink dedicated physical data channel (see Fig. 1).

Regarding claim 4:

3GPP TS25.212 V2.2.0 discloses wherein the transmission gap is located between first and second slots in the frame (see Figs. 19-20).

Regarding claim 5:

3GPP TS25.212 V2.2.0 discloses reducing the spreading factor by a factor of two, and increasing the redundancy of information bits to be transmitted so that the transmission gap length is less than a length of half the frame (page 40 paragraph 4.4.2.3).

Regarding claim 6:

3GPP TS25.212 V2.2.0 discloses wherein the frame is a radio frame comprising fifteen time slots (Fig. 15 shows the radio frame having fifteen time slots).

Regarding claim 7:

3GPP TS25.212 V2.2.0 discloses wherein the information bits to be transmitted on a higher rate data signature sequence to produced a coded information signal; and intermittently transmitting coded information signals in a compressed mode using the reduced spreading factor with a reduced spreading ratio (page 30 paragraph 4.4.42 and page 40 paragraph 4.4.2.3), wherein a frame transmitted in the compressed mode includes a first part having a time duration of less than a duration of the entire frame and a second part also having a time duration of less than the duration of the entire frame (Fig. 20).

Regarding claim 9:

3GPP TS25.212 V2.2.0 discloses defining a length of the transmission gap using increased redundancy of bits on a transport channel and the second spreading factor so that the transmission gap has a length less than a length of half the second frame (see Fig. 15, Table 10 and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame).

Regarding claim 11:

3GPP TS25.212 V2.2.0 discloses wherein the length is defined at least in part by rate matching using increased redundancy of

bits to be transmitted (see the method of transmission time reduction page 40 paragraphs 4.4.2.1 and 4.4.2.2 on using rate matching puncturing and Fig. 15, Table 10 and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame), and the frame is either an uplink frame or a downlink frame (see Figs. 1-2).

Regarding claim 13:

3GPP TS25.212 V2.2.0 discloses determining which format indicator bits are to be repeated based at least in part upon the location of the transmission gap, and wherein the frame is transmitted on either an uplink or downlink channel (Figs. 1-2, Fig. 20, Fig. 15, Table 10 and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame).

Regarding claim 14:

3GPP TS25.212 V2.2.0 discloses repeating format indicator bits from the first slot which is located immediately following the transmission gap, in the second slot which is located proximate an end of the frame (see Fig. 15, Table 10 and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame).

Regarding claim 15:

3GPP TS25.212 V2.2.0 discloses wherein the format indicator bits are TFCI bits, and wherein the frame is transmitted on an uplink physical control channel (Fig. 1 and Fig. 15, Table 10 and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame).

Regarding claim 17:

3GPP TS25.212 V2.2.0 discloses wherein said means for formatting a transmission gap comprises a spreading circuit and a rate matching circuit (pages 30-40 paragraph 4.4.2).

Regarding claim 20:

3GPP TS25.212 V2.2.0 discloses wherein the spread spectrum frame is a CDMA frame, and wherein the transmission gap is located between first and second slots of the frame (Figs. 19-20 and page 7 paragraph 3.3. which recite use of DS-CDMA in the document).

Regarding claim 21:

3GPP TS25.212 V2.2.0 discloses the transmitter for transmitting the frame in an uplink from a mobile station to a base station in the cellular communications network (Fig. 1 and

page 7 paragraph 3.3 which recite the mobile station MS, base station BS, and DS-CDMA communication recited in the document).

Regarding claim 22:

3GPP TS25.212 V2.2.0 discloses wherein the length of the transmission gap is variable via said rate match (pages 39-40 paragraphs 4.4.2.1 and 4.4.2.2).

Regarding claim 24:

3GPP TS25.212 V2.2.0 discloses wherein said mobile station is a cellular phone (page 7 paragraph 3.3 which recite the mobile station MS, base station BS, and DS-CDMA communication recited in the document).

Regarding claim 26:

3GPP TS25.212 V2.2.0 discloses wherein said defining a transmission gap step comprises using a reduced spreading factor and increased redundancy of information bits to be transmitted (see the method of transmission time reduction page 40 paragraph 4.4.2.3 on using reduced spreading factor and Fig. 15, Table 10 and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame).

Regarding claim 28:

3GPP TS25.212 V2.2.0 discloses transmitting the frame on either an uplink or downlink (Figs. 1 and 2).

Regarding claim 29:

3GPP TS25.212 V2.2.0 discloses determining which control bits are to be repeated based at least in part upon the location of the transmission gap in the frame, and wherein the control bits are at least on of TPC bits, TFCI bits, and pilot bits (see page 38 paragraph 4.4.1, Fig. 15, Table 10, and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame).

Regarding claim 31:

3GPP TS25.212 V2.2.0 discloses wherein certain of the control bits are transmitted in slots forming a transmission gap in the information bits (see page 38 paragraph 4.4.1, Fig. 15, Table 10, and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Faerber discloses a method for transferring intersystem connections.

Roach, Jr. discloses a wireless digital network.

Agin discloses a method for improving performances of a mobile radio communication system using a power control algorithm.

Dahlman et al. disclose slotted mode code usage in a cellular communications system.

8. **Any response to this nonfinal action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (2600 Receptionist at (703) 305-4750).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shick Hom whose telephone number is (703) 305-4742. The examiner's regular work schedule is Monday to Friday from 8:00 am to 5:30 pm EST and out of office on alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao, can be reached at (703) 308-5463.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Seema S. Rao
7/28/03
SPE AU 2666

SH

July 28, 2003